CLAIMS

1. A method of producing a catalyst for use in the production of methacrylic acid having a composition of the following formula (1) by subjecting methacrolein to vapor phase catalytic oxidization with molecular oxygen,

wherein, when mixing 100 parts by mass of a solution or a slurry (liquid A) containing molybdenum atoms, phosphorous atoms and vanadium atoms in which the content of ammonium species is 0 to 1.5 mol relative to 12 mol of the molybdenum atoms, 5 to 300 parts by mass of a solution or a slurry (liquid B) containing 6 to 17 mol of ammonium species relative to 12 mol of the molybdenum atoms contained in the solution A and a solution or a slurry (liquid C) containing an element Z, the liquid B is mixed with the liquid A, the liquid C or a mixture of the liquid A and the liquid C over a period of 0.1 to 15 minutes:

$$P_aMo_bV_cCu_dX_eY_fZ_gO_h \qquad (1)$$

in which P, Mo, V, Cu and O represent phosphorous, molybdenum, vanadium, copper and oxygen, respectively, X represents at least one element selected from the group consisting of antimony, bismuth, arsenic, germanium, zirconium, tellurium, silver, selenium, silicon, tungsten and boron, Y represents at least one element selected from the group consisting of iron, zinc, chromium, magnesium, tantalum, cobalt, manganese, barium, garium, cerium and lanthanum, Z represents at least one element selected from the group consisting of potassium, rubidium and cesium, a, b, c, d, e, f, g and h represent an atomic ratio of each element, and when b=12, a=0.5 to 3, c=0.01 to 3, d=0.01 to 2, e=0 to 3, f=0 to 3 and g=0.01 to 3, and h represents

an atomic ratio of oxygen necessary for satisfying the valence of each of the above-mentioned components.

2. The method according to claim 1, wherein 5 to 100 parts by mass of the liquid C is mixed with the liquid A, the liquid B or a mixture of the liquid A and the liquid B over 0.1 to 30 minutes.

3. The method according to claim 1 or 2, wherein the liquid B is a solution or a slurry which contains substantially no phosphorous, molybdenum, vanadium, copper, element X, element Y or element Z.

4. The method according to any one of claims 1 to 3, wherein the liquid C is a solution or a slurry which contains substantially no phosphorous, molybdenum, vanadium, copper, element X, element Y or ammonium species.

5. A catalyst for use in the production of methacrylic acid which is produced by the method claimed in any one of claims 1 to 4.

6. A method of producing methacrylic acid, comprising subjecting methacrolein to vapor phase catalytic oxidization with molecular oxygen in the presence of the catalyst for producing methacrylic acid claimed in claim 5.